

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

REMARKS AND ARGUMENTS

The present application includes claims 1, 3-8, 10-15 and 17-20. Claims 1, 3-8, 10-15 and 17-20 were rejected in the August 11, 2004 Office Action. Claims 1, 7 and 14 have been amended. Claims 4, 6, 11, 13, 18 and 20 have been canceled.

Claim 1 is amended to recite storing predetermined preprocessing functions applicable to the raw image data, where the predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function, the frequency preprocessing function including at least one of an RN, RE, and RT preprocessing parameter, the contrast preprocessing function including at least one of a GT, GA, GC, and GS preprocessing parameter.

Claim 1 is also amended to recite applying, at the image acquisition workstation, at least one and fewer than all of the preprocessing functions to the raw image data to form partially preprocessed raw image data and storing the partially preprocessed raw image data in the preprocessing database, where at least one of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation.

Claims 7 and 14 are amended to recite applying, at the image acquisition workstation, at least one and fewer than all of predetermined preprocessing functions to the raw image data to form partially preprocessed raw image data, where the

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function, the frequency preprocessing function including at least one of an RN, RE, and RT preprocessing parameter, the contrast preprocessing function including at least one of a GT, GA, GC, and GS preprocessing parameter. Claims 7 and 14 are also amended to recite transmitting the partially preprocessed raw image data to a PACS network for storage in a preprocessing database, where at least one of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation.

Claims 1, 3, 5, 7, 8, 10, 12, 14, 15, 17, and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Huang, *PACS: Basic Principles and Applications*.

Claims 4, 6, 11, 13, 18 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huang in view of Takeo et al. (U.S. Patent No. 6,231,246).

Rejections under 35 U.S.C. § 103(a)

The Applicant next turns to the rejection of claims 1, 3, 5, 7, 8, 10, 12, 14, 15, 17, and 19 under 35 U.S.C. § 103(a) as being unpatentable in view of Huang. Huang discloses an image acquisition gateway computer that acquires images from different imaging modalities (Huang, Ch. 8.1, page 199, lines 1-3). Once the raw image data is

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

received at the acquisition computer, a sequential progression of processing functions are applied to the raw image data to completely preprocess the raw image data (Huang, Ch. 8.8.1, pages 224-225).

In addition, the display workstations of Huang do not perform any preprocessing of the image data. The only functions the display workstations perform is the processing of the image data, which is differentiated from the preprocessing of the image data by Huang (Huang, Ch. 12.3.1, page 320, paragraph 1).

In this way, Huang merely discloses two basic workstations - an acquisition workstation and a display workstation (Huang, Ch. 8.1, page 199, lines 1-3; Ch. 12.3.1, page 320, paragraph 1). The acquisition workstation acquires raw data and performs all preprocessing of the image data (Huang, Ch. 8.8.1, pages 224-225). The display workstation merely performs processing of the fully preprocessed image data, which is differentiated from the preprocessing of image data (Huang, Ch. 12.3.1, page 320, paragraph 1). Therefore, under Huang, image data is fully and completely preprocessed at the acquisition workstation and no additional preprocessing occurs at the display workstation.

However, Huang does not teach or suggest applying, at the image acquisition workstation, at least one and fewer than all of the preprocessing functions to the raw image data to form partially preprocessed raw image data and storing the partially preprocessed raw image data in the preprocessing database, where at least one of the

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation, as recited in claim 1.

Huang also fails to teach or suggest storing predetermined preprocessing functions applicable to the raw image data, where the predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function, the frequency preprocessing function including at least one of an RN, RE, and RT preprocessing parameter, the contrast preprocessing function including at least one of a GT, GA, GC, and GS preprocessing parameter, also as recited in claim 1.

Huang also does not teach or suggest 1) applying, at the image acquisition workstation, at least one and fewer than all of predetermined preprocessing functions to the raw image data to form partially preprocessed raw image data (where the predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function, the frequency preprocessing function including at least one of an RN, RE, and RT preprocessing parameter, the contrast preprocessing function including at least one of a GT, GA, GC, and GS preprocessing parameter) and 2) transmitting the partially preprocessed raw image data to a PACS network for storage in a preprocessing database, where at least one of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation, as recited in claims 7 and 14.

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

As described above, Huang discloses that all preprocessing of image data occurs at the acquisition computer, and no preprocessing occurs at a display workstation (Huang, Ch. 8.8.1, pages 224-225). While the image data may be "partially processed" at times between sequential preprocessing steps occurring at the acquisition computer, at no time after image data leaves the acquisition computer is additional preprocessing applied to the image data (Huang, Ch. 12.3.1).

The present rejection encompasses claims 1, 3, 5, 7, 8, 10, 12, 14, 15, 17, and 19. The Applicant respectfully submits that Huang does not teach or suggest elements of at least claims 1, 7 and 14. Claims 3, 5, 8, 10, 12, 15, 17, and 19 depend from claims 1, 7 and 14. Therefore, the Applicant respectfully submits that claims 1, 3, 5, 7, 8, 10, 12, 14, 15, 17, and 19 should be allowable.

The Applicant next turns to the rejection of claims 4, 6, 11, 13, 18 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Huang in view of Takeo. While claims 4, 6, 11, 13, 18 and 20 have been canceled,

Takeo describes a method and apparatus for reproducing an image via two image reproducing devices wherein gradation and/or sharpness correction is performed for both images reproducing devices. Specifically, Takeo describes a method and apparatus that receives an image signal, applies a first processing condition to the image signal for

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

display on a computer screen, applies a second processing condition to the image signal for printing the image on film, stores these two processing conditions, displays the image on the computer screen and prints the image on film (col. 5, lines 64-68; col. 6, lines 1-31).

However, Takeo does not remedy the shortcomings of Huang, as described above. Specifically, Takeo does not teach or suggest applying, at the image acquisition workstation, at least one and fewer than all of the preprocessing functions to the raw image data to form partially preprocessed raw image data and storing the partially preprocessed raw image data in the preprocessing database, where at least one of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation, as recited in claim 1.

Takeo also does not teach or suggest 1) applying, at the image acquisition workstation, at least one and fewer than all of predetermined preprocessing functions to the raw image data to form partially preprocessed raw image data (where the predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function, the frequency preprocessing function including at least one of an RN, RE, and RT preprocessing parameter, the contrast preprocessing function including at least one of a GT, GA, GC, and GS preprocessing parameter) and 2) transmitting the partially preprocessed raw image data to a PACS network for storage in a preprocessing database, where at least one of the preprocessing

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

functions is subsequently applied to the partially preprocessed raw image data at a display workstation, as recited in claims 7 and 14.

Moreover, assuming for the sake of argument that one would be motivated to combine Huang and Takeo, the combination would similarly fail to teach or suggest elements of at least claims 1, 7 and 14. As stated above, neither Huang nor Takeo teach or suggest applying, at the image acquisition workstation, at least one and fewer than all of the preprocessing functions to the raw image data to form partially preprocessed raw image data and storing the partially preprocessed raw image data in the preprocessing database, where at least one of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation, as recited in claim 1. Similarly, as stated above, neither Huang nor Takeo teach or suggest 1) applying, at the image acquisition workstation, at least one and fewer than all of predetermined preprocessing functions to the raw image data to form partially preprocessed raw image data (where the predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function, the frequency preprocessing function including at least one of an RN, RE, and RT preprocessing parameter, the contrast preprocessing function including at least one of a GT, GA, GC, and GS preprocessing parameter) and 2) transmitting the partially preprocessed raw image data to a PACS network for storage in a preprocessing database, where at least one

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation, as recited in claims 7 and 14.

Therefore, as elements of at least claims 1, 7 and 14 are not taught or suggested by Huang and Takeo, alone or in combination, the Applicant respectfully submits that a combination of Huang and Takeo, fails to teach or suggest elements of at least claims 1, 7 and 14.

The present rejection encompasses claims 4, 6, 11, 13, 18 and 20. The Applicant respectfully submits that neither Huang nor Takeo, alone or in combination, teach or suggest elements of claims 1, 7 and 14. Claims 4, 6, 11, 13, 18 and 20 depend from claims 1, 7 and 14. Therefore, the Applicant respectfully submits that claims 4, 6, 11, 13, 18 and 20 should be allowable.

Therefore, the Applicant respectfully submits that the claims of the present application should be allowable over the prior art.

Application No. 09/473,638
Attorney Docket No. 15-IS-5286
Amendment dated September 1, 2004
Reply to Final Office Action of August 11, 2004

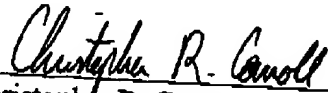
CONCLUSION

If the Examiner has any questions or the Applicant can be of any assistance, the Examiner is invited and encouraged to contact the Applicant at the number below.

The Commissioner is authorized to charge any necessary fees or credit any overpayment to the Deposit Account of GTC, Account No. 50-2401.

Respectfully submitted,

Date: September 1, 2004



Christopher R. Carroll
Registration No. 52,700

MCANDREWS, HELD & MALLOY, LTD.
500 West Madison Street, 34th Floor
Chicago, IL 60661

Telephone: (312) 775-8000
Facsimile: (312) 775-8100